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rian coast of Behring Straits. Notwithstanding a few flat celt-like specimens from Peru, perforated as if for hafting, binding the handles on grooves, seemed to be the universal American characteristic, as against which omnipresent fashion in the new world, we know that the Neolithic peoples in Europe hafted all their stone axes through holes perforating the axe. Why the latter method (granted migration during or after Neolithic times) never reached America remains to be explained.—H. C. MERCER.

MICROSCOPY.

A Method of Preparing Rotifers.[1]—According to N. de Zograf rotifers may be fixed and mounted in glycerin, balsam or dammar and still retain the appearance of life by a slight modification of the method attributed to M. Rousselet in Hennegrey's and Lee's "Traité de microscopie technique."

The animals in a watch glass are narcotized with a solution of cocaine, as used by Rousselet, except that the methylic alcohol is omitted. The solution is added drop by drop to the very small amount of water containing the rotifers. As soon as the movements of the animals cease without having contracted their cilliary apparatus, a considerable quantity of a 1 per cent. solution of osmic acid, diluted with 4–5 volumes of water, is turned upon them and allowed to act for about 2–4 minutes.

Meanwhile a large amount of the liquid is removed with a pipette without disturbing the animals, which have settled to the bottom of the glass. Finally, a weak solution (about 1 volume to 8–10 of distilled water) of crude pyroligneus acid is poured over the animals, and permitted to act for from 5–10 minutes, after which the animals are washed two or three times with distilled water and then the water containing them very gradually replaced by alcohol, commencing with 50 per cent. and finishing with absolute alcohol.

Thus prepared the animals are found to have contracted neither their abdominal appendages, their feet, their band of cillia, nor their tentacles, and can be mounted equally well in glycerin, balsam or dammar. The protoplasm as a result of the action of the osmic acid has a faint gray or brownish tint; and structural details are plainly visible.

The Scirtopods (*Pedalion mirum*) and the Rhizotes (*Melicerta, Lacinularia, Floscularia, Stephanoceros*) give the most beautiful results, and sometimes, if the action of the reagents has been only sufficient to fix the animals, they appear in Canada balsam like living animals.

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[1] Nicolas de Zograf. Sur une méthode de préparation des Rotateurs. Comp. Rend. Acad., Paris, CXXIV, 245–6.

The same method, the author says, has given him perfect results with many infusorians, heliozoans and rhizopods, as well as with *Hydra* and other fresh water forms. With these animals, however, the narcotization is not necessary, but the osmic acid should be increased.—F. C. KENYON.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Boston Society of Natural History.—February 17, 1897.—The following papers were announced: Prof. N. S. Shaler, "Subterranean Water of Southeastern New England;" Dr. C. R. Eastman, "On some Devonian Fish-beds of North America.

March 3.—The following papers were announced: Mr. T. A. Jagger, Jr., "Experimental Study of Mountain Building" (illustrated by models); Mr. J. B. Woodworth, "Geology of the Gay Head Cliff."

March 17.—The following paper was read: Mr. Frank Russell, "An Account of a Naturalist's Voyage down the Mackenzie."—SAMUEL HENSHAW, *Secretary.*

American Philosophical Society.—January 1, 1897.—Mr. Henry C. Mercer read a paper on "The Fossil Sloth of the Big Bone Cave, Tennessee."

February 19.—Prof. E. D. Cope presented a communication on "Some Paleozoic Vertebrates from the Middle States."

March 5.—Prof. Arthur W. Goodspeed exhibited some Recent Radiographs in comparison with the work of a year ago.

University of Pennsylvania.—February 15, 1897.—Program Demonstrations: "Some Types of Insects Injurious to Vegetation," Dr. S. C. Schmucker. Original Communications: "Hatching of Dragonfly Eggs," Dr. Philip P. Calvert; "The Morphology of the Nucleolus," Dr. T. H. Montgomery. Reviews: Drs. Macfarlane and Harshberger.

March 1st.—Program Demonstrations: "The Method of Measuring the Time of Mental Processes," Dr. Lightner Witmer. Original Communications: "Reaction Time of Americans, Indians and Negroes," Mr. Albert L. Lewis. Reviews: "Vertebrate Paleontology," Dr. E. D. Cope; "Physiological Chemistry," Dr. M. E. Pennington; "Botany," Dr. H. C. Porter.—H. C. PORTER, *Secretary.*